ADDITIONS TO THE ORCHIDACEAE OF VICTORIA

(The Genus *Prasophyllum*, R.Br.)

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1.—*Pr. diversiflorum, sp. nov.*

Planta sub-robusta vel gracilis 30-60 cm. alta. Folia marcida in omnibus meis specimenibus. Flores varii 10-36, viride-fusci; ovarium pyriforme, pedicellus brevis; sepalum-dorsale ovato-lanceolatum, cucullatum, apice brevi-acuminatum; sepala-lateralia separata, erecto-patentia, lanceolata, concava, apicibus plerumque bidentatis.

Petala linearia, incurvata, acuta, aliquando manifeste-falcata; Perianthi-segmenta sub-aequalia, 5-9 mm. longa.

Labellum unguiculatum, concavum, basem versus saepe latissimum; apice emarginato, obtuso vel acuminato, aliquando complicatum apud sinum, marginibus crispis vel undulatis raro planis depressum et aliquando sub-constrictum; lamina callosa elevata, apicem versus canaliculata, aliquando constricta et rugosa vel superposita, super majorem partem callosum. Columna brevis, laciniae laterales magnae, apice obliquae. Stigma reniforme, viscidum.

A moderately robust or somewhat slender plant 30-60 cm. high. Leaf-lamina withered in all the specimens seen (about 40), but apparently slender-terete, varying in length, but often exceeding the spike. Flowers variable in size, 10-36 (in my specimens), green with red-brown markings, in a more or less crowded spike, ovary pear-shaped, pedicels very short, the subtending bracts small, depressed; expansion beginning in middle of spike, extending upwards and downwards. Dorsal sepal ovate-lanceolate, usually incurved, 5-nerved, tip shortly acuminate; lateral sepals prominent, lanceolate, concave, outer margins incurved, quite free, erect, divergent, 3-nerved, tips usually bidentate. Petals linear, incurved, acute, in some few flowers prominently falcate, obtuse, 3-nerved. All perianth-segments of about equal length—5-9 mm. Labellum on a short broad movable claw, oblong-cuneate, deeply concave throughout, often very broad towards the base, reflexed (but not markedly so) just beyond the middle, tip narrow, the apex either emarginate, obtuse or acuminate; membranous portion white, suffused with pink, about as broad as the callous part; in some flowers a horizontal fold at the flexion, the whole depressed from the bend upwards; margins crisped or merely undulate, rarely smooth, or somewhat laterally pinched beyond the flexion; callous part green, not prominently raised except towards the tip, divided by a furrow (throughout its length in most flowers, in others terminating near the apex), the furrow widening to a definite channel below the bend.

In some flowers the callous plate also is constructed near the tip, the apical portion appearing as a separate raised somewhat wrinkled callosity as in some species of *Microtis*. Occasionally this raised portion is superimposed over the larger callous part, extending downwards to the bend.

Column short, appendages large, with more or less hatchet-shaped oblique tips, a small rounded lobe at the base. Anther much shorter than rostellum, reniform, red. Rostellum triangular, higher than the appendages, tip emarginate after removal of disc. Pollinia 2-bilobed, caudicle linear of medium length; pollen grains small, depressed (in those examined). Stigma reniform, viscid.

The new species is probably one of the most variable, in regard to the floral characters, on record (W.H.N.), yet *Pr. patens*, R.Br., appears to be its nearest affinity.

Flowering during December, January, February.

Habitat: Gorae West (via Portland); Collector: Mr. Clifford Beauglehole.

"During the winter months the area of several hundred acres (known locally as 'Malseeds'), where this orchid flourishes, is covered to a depth of 2 or more feet of water; really it is a wide creek bed, a natural watercourse; a favourite feeding-ground for emus and kangaroos. The fact that the season 1941 was the driest for 25 years probably explains why this orchid had not been recorded before. Other ground orchids that occur here include *Pterostylis falcata, Caladenia carnea* and some *Microtis* species." Habitat: Flat, heavily-timbered country, rather rough, in black loam soil.

2.—*Pr. Beaugleholei, sp. nov.*

The recent discovery in Victoria of the Tasmanian *Prasophyllum nudum*, Hooker fil.,[1] at Gorae West (via Portland), is, I venture to say, one of the most interesting and important in the history of Australian orchids for many years. This discovery, though it concerns most diminutive (comparatively) plant forms, opens up a long-standing and somewhat complicated question of nomenclature directly involving two or more very distinct specific forms. Two of these species have been described, strange to relate, by the same authority, under the same specific name. One form is credited with a wide distribution, viz., *Pr. rufum*, R.Br.[2] This orchid is the New Zealand *Pr. nudum*, Hooker fil.[3] The Tasmanian plant, to which Hooker also gave the name of *Pr. nudum*, is actually very distinct and identical in every particular with the newly-found Victorian material found at Gorae West and its vicinity.

Pr. rufum, R.Br.—Bentham referred Hooker's *Pr. nudum* of New Zealand to this Australian species, and it is recognized as such in New Zealand now.[4] Incidentally, Hooker considered his *Pr. nudiscapum*, which he records from Tasmania, and *Victoria* also, identical with his New Zealand species *Pr. nudum* (*Pr. rufum*, R.Br.) while Bentham relegates the former to Lindley's *Pr. brachystachyum*. After careful examination of all available material and the original descriptions, I agree with this *circle* of

conclusions, for I can find no feature to distinguish *Pr. brachystachyum* specifically from *Pr. rufum*.

It would be well to mention here that all the specimens under *Pr. brachystachyum*, Ldl., from Victorian localities are misdetermined specimens of *Pr. nigricans*, R.Br. This well-marked species, some little time after the flowering period has passed, loses its characteristic dark colouring, changing to a glaucous green with old-gold markings, before finally withering.

Rodway[5] despite Archer's admirable figures (under *Pr. nudum*, Hk.f.) in the *Flora Tasmanica*, also reduces this form (apparently following prior authorities) to a synonym of *Pr. rufum*.[6] Bentham[7] likewise adds to the confusion when he writes: "The plate of *P. nudum*, Hook. f., above quoted (*Fl. Tasm.*) represents the species correctly as to the general figure, but the analysis, unfortunately, must have been taken from a flower of the *Pr. intricatum*."

It should be noted that *Pr. intricatum*, C. Stuart, is synonymous with *Pr. Archeri*, Hk.f.[8]

Concerning *Pr. rufum*, R.Br.: This species differs materially from *Pr. Archeri*, Hk.f., also from the Tasmanian "*Pr. nudum*, Hk.f.," in having entire margins to a much narrower and more acute labellum, and also non-ciliate appendages to the column. Hooker writes, in reference to the last mentioned plant, "a near relation of *Pr. Archeri*, yet distinct." This sums up its relationship, and its closest affinity.

From *Pr. Archeri*, Hooker's *Pr. nudum* (*Fl. Tasm.*) differs mainly in the longer inflorescence and smaller, more abundant flowers; the relative lengths of the perianth-segments, broader labellum (possessing distinctive characteristics) and a different column. Thus it seems somewhat strange that so distinctive a form should have caused perplexity.

I am again indebted to Mr. Clifford Beauglehole for my specimens of this intriguing *Prasophyllum*. The three original specimens found at Gorae West were handed to him by a young collector (Master W. Phillips, age 13) and were collected on the property of Mr. Phillips, senr.

In all, fourteen flowering plants have been noted in this area, the majority, however, being in advanced fruiting stage. Even in this condition, and also when in early bud, the species may with certainty be easily known from other described Victorian forms by *the characteristic lateral sepals*.

The Gorae West specimens were growing "in black sand, inclined to be peaty, somewhat dry, fairly wet in winter, with Bottle-brush and Tea-tree (in association); also some fern growth 2 feet high—the position well-shaded from the sun." The additional locality already mentioned for this *Prasophyllum* was found on the 24th February by Mr. Beauglehole himself; approximately 2 miles west from Gorae West. (The original find was on the 10th Feb.)

Three additional specimens were found here, including a remarkably robust, many-flowered plant, possibly representing the maximum development in the species. This habitat is "a peaty swamp, a dangerous locality for walking"; it gave the searcher "the creeps."

In consequence of the prior use of the specific name of *nudum* for Hooker's New Zealand species, which is now correctly interpreted as the species which Robert Brown had long before named *Pr. rufum*, the re-use of this name by Hooker for the Tasmanian plant is therefore invalid. Thus a new name must be given to the latter, which has (so surprisingly!) turned up in Victoria also. Archer's figure (previously quoted) shows a filiform leaf-growth arising from the sheath. Such an occurrence is not uncommon in *Pr. Archeri* in alpine regions. It probably is found in other somewhat similar species also.

I am re-naming Hooker's *Pr. nudum* of the *Flora Tasmanica* after Mr. Clifford Beauglehole, for it is mainly through his keenness that this little terrestrial orchid has been rediscovered, in this instance on the mainland of Australia. This indefatigable collector was instrumental in the finding also of *Pr. diversiflorum, sp. nov.*, and of *Pr. fusco-viride*, Reader, the last-mentioned gem a new record for S.W. Victoria.

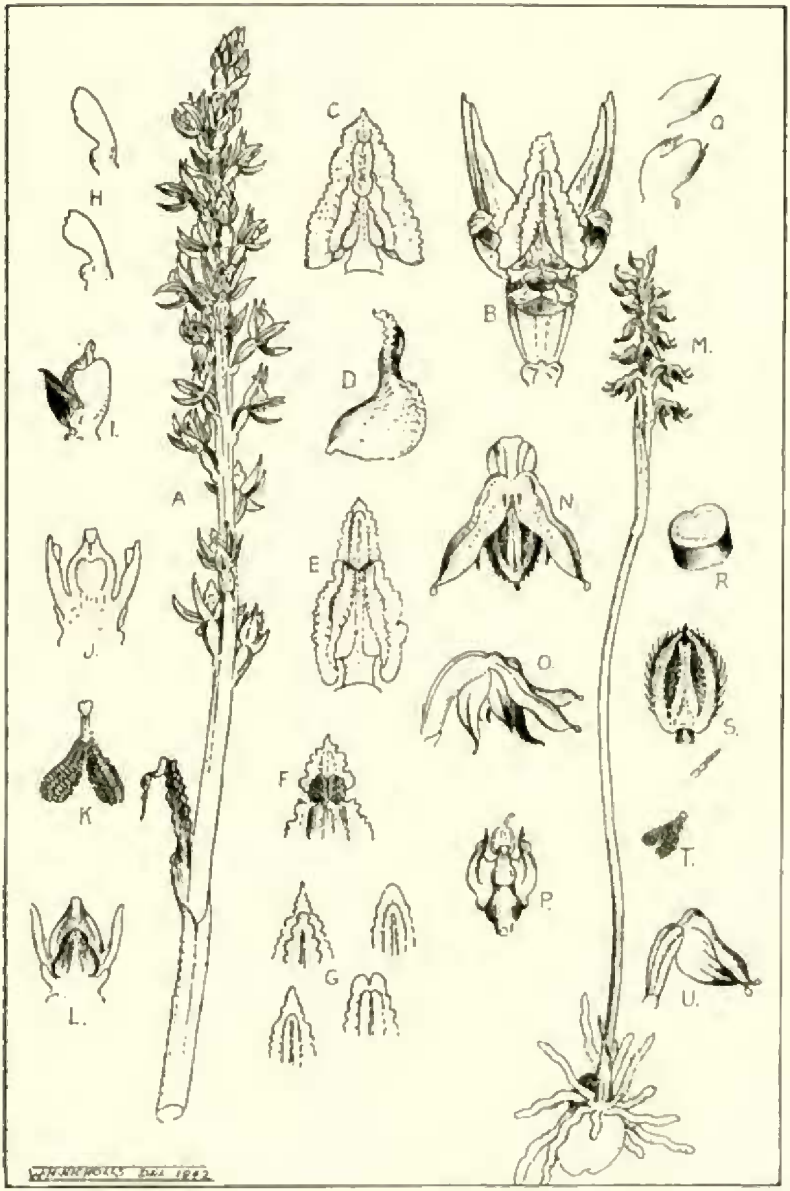
Prasophyllum Beaugleholei, sp. nov.

Planta gracillima, circa 10-20 cm. alta; super caulis medium bractea subulata. Inflorescentia spica laxiuscula vel compacta circa 1.5-3.3 cm. longa; flores 5-42, parvi deflexi atro-purpurei badii vel virides, pedicelli breves; sepalum dorsale manifeste cucullatum 1½-3 mm. longum, apice glandulosus; sepala lateralia circa 2½-3 mm. longa, patentia lanceolata, concava, basi connata, apicibus glandulosis; petala triangularia lanceolata, acuminata, 1½-2½ mm. longa. Labellum unguiculatum, ovatum, semi-recurvum, 1½-3 mm. longum, marginibus brevi-culatis, laminae pars callosa bifida, duobus partibus, parallelis papillosis, elevata, exiguo sulcato inter partes; Anthera longe mucronata. Laciniae laterales bifidae, marginibus anterioribus ciliatis; stigma orbiculare concavum.

A very slender plant usually about 10-16 cm. high (robust specimens up to 20 cm.) Tuber globular or of irregular shape. Base of stem with a fibrous sheath, often with the remains of old tubers attached. Stem usually wiry (in robust specimens 3 mm. thick). Fruiting specimens often attain a length of 30-35 cm.

Leaf-lamina below the inflorescence, sheathing bract-like, 2-3 cm. long. Flowers very small, 5-42 (in my specimens), sessile, green and red-brown or purplish-black, somewhat deflexed. Ovary long, curved, a minute rather blunt bract at the base. Dorsal sepal conspicuously hood-shaped, erect 1½-3 mm. long, tip with a gland at the apex, lateral sepals connate at the base, about 2½-3 mm. long, lanceolate, concave, erect, divergent, tips with a prominent gland. Petals slightly shorter than dorsal sepal, triangular-lanceolate, acuminate.

Labellum *ovate* with a short acute apex, semi-recurved, fleshy,



Prasophyllum, spp.; two main figures slightly reduced. (For Key, see p. 14.)

surface raised, *papillose*, green with deep red-brown or purplish-brown markings, about same length as dorsal sepal, attached to a prominent columnar projection by a movable claw, margins shortly ciliate, *cilia inclined towards the tip*. Individual cilia glandular, callous portion raised, divided into two parallel sections by a narrow groove, which is wider at the base, each section lanceolate, uniting at the tip in a dark-coloured blotch (in most flowers examined); membranous part about same width as raised sections. Anther with a moderately long point. Pollinia 2, no caudicle. Rostellum shorter than the anther. Column appendages prominent, outer lobes purplish, much narrower and slightly longer than the inner lobes, outer margins *minutely ciliate*. Inner lobes broad, rounded, not coloured, margins entire. Stigma circular, concave. Flowering period: January, February, March. Distribution: Tasmania, Victoria.

Hooker's locality for this species is unknown, for he records "Tas.: but I do not know where." Thus the following Victorian habitats are the only known ones, viz.: Gorae West (W. Phillips et C. Beauglehole); two miles west from Gorae West (C. Beauglehole.)

3.—*Pr. fusco-viride*, Reader.[9]

This rare and attractively coloured species is on record only from Yorke Peninsula in South Australia, and from Dimboola in Victoria, Dimboola being the original habitat. It has now reached me from Bridgewater (via Portland). Collector: C. Beauglehole, March 5th, 1942. The Bridgewater flowers differ from those of Dimboola only in having a conspicuous white gland inset at the tip of the labellum—a feature represented in the Dimboola flowers by a dark-coloured blotch.

4.—*Pr. flavum*, R.Br.[10]

R. D. FitzGerald's plate in *Australian Orchids*,[11] under *Pr. australe*, R.Br. has often created interest and speculation as to the true character of the form he figures. It is, however, but a sturdy specimen of Robert Brown's *Pr. flavum*, minus the characteristic yellow tinge of the typical form. The present writer and Mr. F. J. Bishop discovered this dark green form on the track from Stringer's Creek (via Walhalla) to Mt. Erica (E. Vic.) during the year 1923, also on two subsequent journeys. This form varied in height from 30 cm. to over 70 cm. and the flowers number from about 12 to over 70. Almost wholly green, the other colour, dark-brown, was more or less inconspicuous, and the labellum white. This green form appeared to be restricted to the rock-strewn slopes of the lower hills, in more or less unsheltered positions; the surrounding vegetation, besides the low-growing Eucalypts, consisting mainly of *Cassinia longifolia*, *Helichrysum semipapposum* and a *Goodenia* sp.

Several photographs were secured of plants growing right on the main highway only 18 inches from the vehicle tracks. The normal yellowish form also occurs hereabouts, higher up where the big gums grow. The difference between them, though striking at first glance, is confined to the absence of the yellow colour (in the green form) and the incurved floral segments. Thus not sufficient variation exists to warrant a varietal name. On the other hand, FitzGerald's plate of *Pr. flavum*[12] represents a small form which must be very rare indeed—if the artist has not exaggerated the yellow colour of the blooms, here shown as golden-yellow. FitzGerald's material of the green form was collected in New South Wales (Loc., Conjola lake, near Ulladulla).

5.—*Pr. Morrisii*, Nich., variety *contortum*,[18] n. var.

Planta robusta, circa 30-35 cm. alta. Labellum ovato-cuneatum, basi latum, apice contortum.

A comparatively robust plant about 30-35 cm. high. Flowers larger than those of the typical form. Labellum ovate-cuneate, the base very wide; apex of labellum with a peculiar undulate, somewhat contorted twist.

Habitat: Pyrete Range (via Gisborne). On rocky ledges in ironbark country, in association with *Caleana major*, R.Br. (Collector: G. Lyell, F.E.S.)

REFERENCES

1. *Flora Tasmanica*, ii, 14, tab. 113 (partly), (1860).
2. *Prodromus Flora Novae Hollandiae*, p. 319, (1810).
3. *Flora Novae Zealandiae*, i, p. 242, (1853).
4. *Manual Flora New Zealand*, p. 676.
5. *Tasmanian Flora*, p. 194, (1903).
6. See also *Flora Australiensis*, vi, p. 344, (Bentham); *Flora Queensland*, v., p. 1570, (Bailey).
7. *Fl. Aust'sis*, vi, p. 344.
8. *Victorian Naturalist*, xlviii, p. 110.
9. *Ibid*, xiv (1898), p. 163; *Trans. Roy. Soc. S. Austr.* (1909), xxxiii, p. 206 (under *Pr. Tepperi*, Muell. et Rogers).
10. *Prod. Fl. Nov. Holl.*, p. 318.
11. *Australian Orchids*, ii, pt. 1.
12. *Ibid*, i, pt. 3.
13. *Vic. Nat.* (Oct., 1931), pl. iii, Figs e. j, o. s (Lab. et col.)

KEY TO PLATE

Prasophyllum species

A.—Flowering spike of *Pr. diversiflorum, sp. nov.*
B.—Flower from front of *Pr. diversiflorum, sp. nov.*
C.—A Labellum from front of *Pr. diversiflorum, sp. nov.*
D.—A Labellum from side of *Pr. diversiflorum, sp. nov.*
E.—A Labellum from front of *Pr. diversiflorum, sp. nov.*
F.—Labellum tips of *Pr. diversiflorum, sp. nov.*
G.—} Column appendages of *Pr. diversiflorum, sp. nov.*
H.—}
I.—Column from side of *Pr. diversiflorum, sp. nov.*

J.—Column showing stigmatic plate et of *Pr. diversiflorum, sp. nov.*
K.—Pollinia of *Pr. diversiflorum, sp. nov.*
L.—Column showing Anther of *Pr. diversiflorum, sp. nov.*
(Note figs. B, C, E and F show the most important variations in the labellum.)
M.—A typical specimen of *Pr. Beaugleholei, sp. nov.*
N.—A flower from above of *Pr. Beaugleholei, sp. nov.*
O.—A flower from side of *Pr. Beaugleholei, sp. nov.*
P.—Column showing stigma, etc., of *Pr. Beaugleholei, sp. nov.*
Q.—Column appendages, showing variation of *Pr. Beaugleholei, sp. nov.*
R.—Cross-section of stem of *Pr. Beaugleholei; sp. nov.*
S.—A Labellum from front, also individual cilia of *Pr. Beaugleholei, sp. nov.*
T.—Pollinia of *Pr. Beaugleholei, sp. nov.*
U.—A bud of *Pr. Beaugleholei, sp. nov.*

THE RAINBOW-BIRD AS A BEE-EATER

I have recently come upon some notes, laid aside for several years, which Mr. Henry Tryon, former Government Entomologist of Queensland, wrote in regard to the Rainbow-bird (*Merops ornatus*), sometimes termed the Bee-eater. They include the following observations:

That *Merops* does not exclusively or principally feed upon bees will appear from the fact that in examining the stomachs of five individuals obtained in different parts of Australia, at different times of the year, all were found to contain insects exclusively, of different orders, but none of these were bees, and the last *Merops* stomach whose contents I scrutinised contained five dragon flies, twelve meat ants, and other insects in a fragmentary condition. As is well known, meat ants are natural enemies of the honey bee, amongst other insects.

Under the conditions inseparable from bee-keeping, the undoubted habit of capturing bees may be very apparent, but the birds' less obvious habit, but one persistently exercised, with respect to other insects, is commonly overlooked. Attention is seldom drawn to this habit of *Merops* except when the swarms are very weak and there is little or no flow of honey to sustain the hive. Then, if the bee-eaters are found feeding about the hives, and giving their attention largely to capturing bees, failure in honey production on the part of the hive is wont to be put down exclusively to their depredations.

Paradoxical as it may appear, observations indicate that the bee-eating habit exercised at this time, and at such season, actually is in the interests of the apiculturist. This is brought about by the fact that whilst the bird at certain times captures bees frequenting hives under control, it at all times and in all seasons preys on honey bees that, having "gone wild," have become established generally in the bush. Thus it serves in so doing to remove competitors for the greatly reduced supply of honey yielded by the native flora, on the amount of which the very existence of the apiary is at all times dependent.

In fact, did not the wild naturalized bees meet with an enemy in the bird in question, it would go hard indeed for the apiarists' industry when a severe drought reduced almost to a vanishing point the ordinary sources whence the honey of the hive was garnered. This remark also applies to the other native birds that to a greater or less extent capture and consume bees.

However, all bee-consuming birds may not be as harmful as at first sight would appear. In Europe the Redstart has been blamed for exercising the habit, but J. O. Owen has pointed out (*Birds—Useful and Harmful*) that whilst this bird does capture honey bees, it confines its attention almost entirely to the comparatively useless drones.

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